

List of All Chemicals

P Melaleuca viridiflora (Myrtaceae)

Common name(s)

Niaouli; Broad-Leaf Tea-Tree

*Unless otherwise noted all references are to Duke, James A. 1992. Handbook of phytochemical constituents of GRAS herbs and other economic plants. Boca Raton, FL. CRC Press.

| Chemical | Plant Part | Low PPM | High PPM | StdDev | *Reference |
|---|------------|---------|----------|--------|---|
| ALPHA-PINENE | Leaf | -- | -- | | Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952. |
| Activities (28) | | | | | |
| Allelochemic | | | | | |
| Allergenic | | | | | |
| Antiacne | | | | | |
| Antibacterial | | | | | |
| Antifeedant | | | | | |
| Antiflu | | | | | Economic & Medicinal Plant Research, 5: 195. |
| Antiinflammatory | 500 mg/kg | | | | |
| Antipneumonic | | | | | |
| Antiseptic | | | | | |
| Antispasmodic | | | | | |
| Antistaphylococcic | | | | | |
| Antiviral | | | | | Economic & Medicinal Plant Research, 5: 195. |
| Cancer-Preventive | | | | | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Coleoptophile | | | | | |
| Expectorant | | | | | Michael Castleman 1991. The Healing Herbs. Rodale Press, Emmaus, PA 436 pp. |
| FLavor FEMA 15-150 | | | | | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Herbicide IC50=30 uM | | | | | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. |
| Insecticide 0.82 uM/fly | | | | | |
| Insectifuge 50 ppm | | | | | |
| Insectiphile | | | | | J. Stored. Prod. Res., 22:141, 1986. |
| Irritant | | | | | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| P450-2B1-Inhibitor IC50=0.087 uM | | | | | |
| Perfumery | | | | | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Pesticide | | | | | |
| Sedative | | | | | Lawrence Review of Natural Products, Jun-90. |
| Spasmogenic | | | | | |
| Tranquilizer | | | | | Lawrence Review of Natural Products, Jun-90. |
| Transdermal | | | | | |
| ALPHA-TERPINEOL | Leaf | -- | -- | | Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952. |
| Activities (23) | | | | | |
| ACE-Inhibitor 100 ug/ml (weak activity) | | | | | |
| Aldose-Reductase-Inhibitor 100 ug/ml | | | | | Okamura, K., Iwakami, S., Matsunaga, T. 1992. Biological Activity of Monoterpenes from Trees. Toyama-Ken Yakuji Kenkyusho Nenpo, (20): 95-101. |
| Allelopathic | | | | | Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands. |
| Antiacne | | | | | |
| Antibacterial MIC=800-1,600 ug/ml | | | | | Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105. |
| Anticancer | | | | | Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY. |
| Anticariogenic MIC=800-1,600 ug/ml | | | | | Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105. |
| Antiinflammatory | | | | | |
| Antiproliferant | | | | | |
| Antiseptic | | | | | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Cicatrizant ED50=240 ug/g mus | | | | | |
| FLavor FEMA 5-40 | | | | | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |

| | |
|--------------------------|---|
| uM/fly | |
| Interleukin-6-Inhibitor | |
| Mosquitofuge > Deet | |
| Motor-Depressant | Buchbauer et al, e.g.Buchbauer et al,1993.Therapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC |
| Nematicide MLC=1 mg/ml | Shoyakugaku Zasshi, 44: 183. |
| Perfumery | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Pesticide | |
| Sedative | Buchbauer et al, e.g.Buchbauer et al,1993.Therapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC |
| Termiticide IC100=5 mg/g | |
| Transdermal | |
| Vulnerary | |
| ED50=240 ug/g mus | |

BENZALDEHYDE Leaf -- -- Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.

Activities (24)

| | |
|------------------------------------|---|
| Allergenic | |
| Anesthetic | |
| Antibacterial | |
| Anticancer | |
| Antimutagenic | |
| Antipeptic | |
| Antiseptic | |
| Antispasmodic | |
| Antitumor | |
| Candidicide | |
| FLavor FEMA 150-800 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Immunostimulant | |
| Insecticide | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. |
| Insectifuge 50 ppm | J. Stored. Prod. Res., 22:141, 1986. |
| Motor-Depressant | Buchbauer et al, e.g.Buchbauer et al,1993.Therapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC |
| Narcotic | Merck 11th Edition |
| Nematicide MLC=1 mg/ml | Shoyakugaku Zasshi, 44: 183. |
| Pesticide | |
| Sedative | Buchbauer et al, e.g.Buchbauer et al,1993.Therapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC |
| Termiticide LD100=5 mg/g | |
| Tyrosinase-Inhibitor ID50=820 uM | |
| Tyrosinase-Inhibitor ID50=87 ug/ml | |
| Tyrosinase-Inhibitor ID50=0.82 mM | |
| Tyrosinase-Inhibitor ID50=830 uM | |

CINEOLE Leaf 4600.0 15600.0 1.99 Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.

CINNAMIC-ACID-METHYL-ESTER Leaf 7500.0 19500.0 *

CITRAL Leaf -- -- Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.

Activities (53)

| | |
|------------------|---|
| Allergenic | |
| Antiallergenic | |
| Antiallergic | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp. |
| Antianaphylactic | |
| Antibacterial | |
| Anticancer | |
| Antihelicobacter | |
| Antiherpetic | |
| Antihistaminic | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp. |

| | |
|------------------------------------|---|
| Antileishmanic | |
| Antioxidant | |
| Antiseptic 5.2 x phenol | Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp. |
| Antishock | |
| Antispasmodic | |
| Antitumor | |
| Antitumor (Colon) | |
| Antitumor (Liver) | |
| Antitumor (Skin) | |
| Antiulcer | |
| Antiviral | |
| Apoptotic | |
| Barbituate-Synergist | |
| Bronchorelaxant | Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp. |
| Calcium-Antagonist | |
| Cancer-Preventive | Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Carcinogenic | |
| Caspase-3-Inducer | |
| Chemopreventive | |
| Cytotoxic | |
| Estrogenic | |
| Expectorant | Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp. |
| FLavor FEMA 4-170 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Fungicide MIC 625 ug/ml | |
| Glaucomagenic | |
| Glutathionigenic | |
| Herbicide IC50=115 uM | Keeler, R.F. and Tu, A.T. eds. 1991. <i>Toxicology of Plant and Fungal Compounds</i> . (<i>Handbook of Natural Toxins Vol. 6</i>) Marcel Dekker, Inc. NY. 665 pp. |
| Myorelaxant 200 mg/kg | |
| NF-kB-Inhibitor | |
| NO-Inhibitor | |
| Nematicide IC52=100 ug/ml | Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture</i> . Plenum Press, New York. 445 pp. |
| Nematicide MLC=100-260 ug/ml | Shoyakugaku Zasshi, 44: 183. |
| P450-2B1-Inhibitor IC50=1.19 uM | |
| Perfumery | Merck 11th Edition |
| Pesticide | |
| Prostatitigenic 185 mg/kg/day/3 ms | |
| Sedative ED 1-32 mg/kg | Wagner & Wolff, eds. 1977. <i>New Natural Products</i> (RS164. I56. 176) |
| Sedative 1 mg/kg | |
| Teratogenic | |
| Trichomonicide LD100=150 ug/ml | |
| Trypanocide | |
| Tyrosinase-Inhibitor ID50=1.5 mM | |
| Tyrosinase-Inhibitor ID50=1,500 uM | |

DIPENTENE Leaf -- -- Guenther, E., *The Essential Oils*, 6 volumes, D. van Nostrand, New York, 1948-1952.

Activities (7)

| | |
|---------------|--|
| Allergenic | |
| Antibacterial | Leung, A. Y. and Foster, S. 1995. <i>Encyclopedia of Common Natural Ingredients</i> 2nd Ed. John Wiley & Sons, New York. 649 pp. |
| Antiviral | Leung, A. Y. and Foster, S. 1995. <i>Encyclopedia of Common Natural Ingredients</i> 2nd Ed. John Wiley & Sons, New York. 649 pp. |
| Expectorant | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp. |
| Irritant | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp. |
| Pesticide | |
| Sedative | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp. |

EO Leaf 10000.0 26000.0 1.27 Guenther, E., *The Essential Oils*, 6 volumes, D. van Nostrand, New York, 1948-1952.

EUGENOL Leaf -- -- List, P.H. and Horhammer, L. *Hager's Handbuch der Pharmazeutischen Praxis*, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

Activities (76)

Acaricide LD50=5.47 ug/sq cm cf DEET at 37.59 ug/sq cm

Allergenic

| | |
|---|---|
| Anesthetic 200-400 | Phytotherapy Research, 4: 93. |
| AntiTNF | |
| Antiaggregant IC50=0.3 uM | Phytotherapy Research, 4: 93. |
| Antiarachidonate | |
| Antibacterial 500 ppm | Valnet, J. 1982. The Practice of Aromatherapy. Translated from the 1980 French Edition by Robin Campbell and Libby Houston. Destiny Books, New York. 279 pp. |
| Antibacterial MBC=400 ug/ml | |
| Anticonvulsant | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Antiedemic 100 | Phytotherapy Research, 4: 95. |
| Antiestrogenic | |
| Antifeedant | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Antigenotoxic 50-500 mg/kg orl mus | |
| Antihypertetic IC50=16.2-25.6 ug/ml | |
| Antiinflammatory (11 uM) IC~97=1,000 uM | |
| Antikeratotic IC50=16.2-25.6 ug/ml | |
| Antimitotic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Antimutagenic | Economic & Medicinal Plant Research, 6: 235. |
| Antinitrosating | |
| Antioxidant IC65=30 ppm | |
| Antioxidant 10 uM | |
| Antiprostaglandin 11 uM | |
| Antiprostaglandin IC50=9.2 mM | |
| Antipyretic 3 ml/man/day | |
| Antiradicular EC50=2 ul/l | |
| Antisalmonella MIC=400 ug/ml | |
| Antiseptic 3 ml/man/day | |
| Antiseptic 400 ug/ml | |
| Antispasmodic | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. |
| Antistaphylococcic | Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands. |
| Antithromboxane | Lawrence Review of Natural Products, Jul-87. |
| Antitumor | Zheng, G-Q., Kenney, P.M., and Lam, L.K.T. Sesquiterpenes From Clove (<i>Eugenia caryophyllata</i>) As Potential Anticarcinogenic Agents. Journal of Natural Products 55(7): 999-1003, 1992. |
| Antiulcer | |
| Antiviral IC50=16.2-25.6 ug/ml | |
| Apifuge | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| CNS-Depressant | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| COX-1-Inhibitor IC97=1,000 uM | |
| COX-2-Inhibitor IC>97=1,000 uM | |
| COX-2-Inhibitor IC50=129 uM | |
| Calcium-Antagonist IC50=224 uM | |
| Calcium-Antagonist IC50=200 uM gpg | |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Candidicide | Phytotherapy Research, 4: 93. |
| Carcinogenic? | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp. |
| Carminative | Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. <i>J. Pharm. Pharmacol.</i> 46: 14-18, 1994. |
| Choleretic | |
| Cytochrome-P450-Inhibitor | Pizzorno, J. 1998. Total Wellness. Prima Health, a division of Prima. |
| Cytotoxic 25 ug/ml | Phytotherapy Research, 4: 93. |
| Dermatitogenic | |
| Enterorelaxant | J. Aromatherapy 4: 22. |
| Flavon FEMA 10-500 | Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry |
| Fungicide | |
| Hepatoprotective 100 ppm | |
| Herbicide | |
| Insecticide | |
| Insectifuge | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Irritant | |
| Juvabional | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Larvicide | |

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|---|---|
| Nematicide MLC=2,000 ug/ml | Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC Shoyakugaku Zasshi, 44: 183. |
| Neurotoxic | R.J. Hixtable (Huxtable, R.J. (as T. Max). 1992. This and That: The Essential Pharmacology of Herbs and Spices. Tips 13:15-20 Huxtable, R.J. 1992b. The Myth of Benficial Nature. The Risk of Herbal Preparations. Ann. Intern. Med. 117(2):165-6; Huxtable, R. |
| Perfumery | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Pesticide | |
| Prostaglandin-Synthesis-Inhibitor 1 mM rbt | Chen, S. J., Wang, M. H., Chen, I. J. 1996. Antiplatelet and Calcium Inhibitory Properties of Eugenol and Sodium Eugenol Acetate. Gen Pharmacol, 27(4): 629-633. |
| Prostaglandin-Synthesis-Inhibitor IC50=9.2 uM | |
| Sedative | |
| Termiticide LD100=5 mg/g | |
| Trichomonicide LD100=300 ug/ml | |
| Trichomonistat IC50=10 ug/ml | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp. |
| Trypsin-Enhancer | Lawrence Review of Natural Products, Dec-93. |
| Ulcerogenic | Phytotherapy Research, 4: 93. |
| Varroacide | |
| Vasodilator | |
| Vermifuge | |

L-LIMONENE Leaf -- -- Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.

Activities (2)

Antiacyetylcholinesterase IC25=1.2 mM
Antiacyetylcholinesterase IC27=164 ug/ml

LINALOL Leaf -- -- Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.

LINALOL-MONOXIDE Leaf -- -- Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.

NEROLIDOL Leaf -- -- Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.

Activities (11)

Aldose-Reductase-Inhibitor
Allergenic
Antiacne
Antibacterial MIC=25-200 ug/ml Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105.
Anticariogenic MIC=25-200 ug/ml Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105.
Antifeedant 1 mM (diet) Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.
Antistreptococcic
FLavor FEMA 1-10 Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Nematicide MLC=1 mg/ml Shoyakugaku Zasshi, 44: 183.
Perfumery Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Pesticide

SESQUITERPENES Leaf -- -- Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.

TRANS-BETA-OCIMENE Leaf 2000.0 5200.0 1.41 *